# APPENDIX

FOMC Notes -- Peter Fisher

March 22, 1994

I will be referring to the two color charts distributed this morning, and I will try to address two questions:

First, why is the dollar lower now against the yen and the mark than it was at the time of your last meeting?

And second, what are some of the factors that triggered the rapid and parallel backing up of interest rates in a number of countries starting in mid-February?

The absence of a U.S.-Japan trade agreement, following the Clinton-Hosokawa meeting, and the glacial pace of monetary easing by the Bundesbank are the two factors that most directly contributed to the dollar's decline. However, to understand the dollar's movements and the extraordinary movements in bond yields, it is worth looking at the expectations and the positions with which market participants began 1994. Joan will be going over the events that directly affected the U.S. government securities market. I will try to describe some of the key events in the foreign exchange market and in other countries, indicating some of the connections among markets.

The first chart shows the movements in dollar-yen, dollar-mark, and "G-5" bond yields from last July through January. As 1993 came to a close, market participants expected that the weak Japanese stock market and the deteriorating economy would force the Bank of Japan to ease once again. Although the Bundesbank had fixed its market operations at 6 percent from December to early January, it was widely expected to resume the more rapid easing it had begun in October, which would permit German and European interest rates to come down quickly. While U.S. interest rates were expected to go up in the first half of 1994, the timing and extent of this remained uncertain. With these expectations, a wide range of market participants began the year with quite similar positions: long Japanese government bonds, long European government bonds, and long dollars against both the yen and the mark.

The second chart shows the same exchange rates and yields from December to the present, with indications for the dates of some of the events--or "trip wires"--that successively undercut the assumptions that supported these positions, resulting in an accumulation of losses for market participants.

In early January the Nikkei rallied sharply on a large flow of foreign money. This weighed on dollar-yen, both as a result of the demand for yen and by reducing the likelihood of an easing by the Bank of Japan. On January 13th rumors circulated in Tokyo that the Trust Division of the Ministry of Finance would begin liquidating some of its holdings of Japanese government bonds (JGBs), and the next day it was announced that 900 billion of JGBs would be sold before the end of the fiscal year. In the first half of the fiscal year the Trust Division had been a net purchaser. This shift in stance, combined with rising expectations for an increased supply of government debt and the decreasing expectations for further ease, caused a rapid sell-off in the JGB market, as indicated by the first "trip wire." By the end of January, when the 10-year JGB had backed up by 75 basis points, we began to hear the first rumors of large-scale losses at investment banks and/or hedge funds.

On February 4th, the Committee's action led to a brief rise in the dollar against both the mark and the yen. There was a brief period of profit taking, while market participants awaited the outcome of the Clinton-Hosokawa meeting and some signal of further easing from the Bundesbank. In retrospect, the failure of the dollar to sustain much more of a rally can be seen as reflecting just how long dollars the market was.

Although the dollar-yen declined in the days running up to the Clinton-Hosokawa summit on February 11th, market sentiment was dominated by the view that the dollar would rise against the yen (and also against the mark) once the meeting and the trade issue were "out of the way." Some market participants extended their long dollar positions at "cheaper" prices as their Washington "listening posts" assured them that a trade deal was in the works. With the empty-handed outcome of the meeting, the dollar began to sell off in thin Friday trading. On Monday, the liquidation of long-dollar positions accelerated, and in New York in the afternoon the dollar traded down to a low of 101.10 and closed at 102.60. The dollar also moved down against the mark, as market participants sought an alternative means of reducing their dollar holdings.

Attention then turned to the prospect for further Bundesbank easing. In this setting, the dollar's post Valentine's Day weakness encouraged market participants to hope that the Bundesbank would lower rates at its February 17th Council meeting. After all, despite the Fed having tightened, the mark was not weaker but stronger against the dollar, giving the Bundesbank the opportunity to lower rates without the mark suffering a double hit--or so hoped market participants.

On February 17th the Bundesbank lowered its Discount Rate by 50 basis points, but left its Lombard and repurchase rate unchanged. The decrease in the Discount Rate, which acts as something of a floor on the repo rate, provided a prospect of further easing in the coming weeks, but this would be too late and too uncertain for market participants who:

-- had already incurred mark-to-market losses on European bond positions since the start of the year;

--were incurring the high cost of carry for these positions under repo financing;

--had already suffered losses in either JGBs or long dollar positions or both;

--in some cases also suffered mark-to-market losses in "emerging market" equities and Brady bonds.

Although in subsequent weeks the Bundesbank has reduced the repo rate, it has done so in successive baby steps of a 3, another 3, and finally a 6 basis point move.

A number of market participants have described the period from mid-February as a "liquidation crisis" but one which began not so much with an abundance of selling as with limited buying capacity. In particular, major market makers, who have suffered losses on their strategic positions since the start of the year, were trying to limit losses--or hold onto profits--for the first quarter. The risk management systems used by hedge funds, investment banks, and the major commercial banks typically specify a profit objective, a loss tolerance, and volatility assumptions all for a given month or quarter. As either losses or volatilities rise, these systems dictate a reduction of risk over the remaining period and, thus, require the closing of positions. As market makers reluctantly took on bond positions from their customers, they were forced to head to the futures markets to offset these additional exposures at the same time they were trying to unwind their own positions. As prices moved further and faster, volatilities increased and additional mark-to-market losses were incurred, leading to further reductions in risk tolerance and further reductions in positions. While this kind of risk management discipline is obviously desirable in terms of an individual firm's exposure, the pressure is shifted to the markets in price movement and volatility.

The widespread use of "proxy hedging" also contributed to the parallel movements in bond yields. An extreme example of this is reflected in the movements of U.K. government securities (the green line on the third panel of the second chart). Following the Bundesbank's February 17th meeting, the futures contract on gilts was sold as a proxy for a wide range of European government bonds, and as a result U.K. 10-year interest rates backed up faster than others.

On March 1st the 7.5 percent U.S. GDP figure was released, as was the NAPM survey. On March 2nd, the Bundesbank announced that German M3 grew by over 20 percent in January. Both events contributed to market volatility and to market anxiety about the course of interest rates. Then on March 3rd two events occurred which helped to calm at least some markets. First, the Bank of Spain cut its repo rate by 50 basis points, which provided a reminder to market participants that the trend for short-term European interest rates was still downward. To some this reawakened the possibility for a "decoupling" of U.S. and European bond yields. Also on March 3rd, the Clinton Administration announced the reassertion of "Super 301" trade sanction powers. To the surprise of some, this served to reduce anxieties in the exchange market.

- Following the Clinton-Hosokawa meting, the absence of concrete actions by the Administration on the trade front contributed to the view that the U.S. would rely principally on talking up the yen. The

Bank of Japan's operations, which totalled dollars purchased from February 15th to March 4th, had stabilized the dollar around 104, but anxiety remained about U.S. policy, and market participants continued to perceive a risk that the dollar could fall quickly to and through 100 yen. The Super 301 announcement indicated that the U.S. did intend to use policy tools other than exchange rates, and the next morning in Tokyo the dollar moved up quickly through 105 and has recently traded around 106.

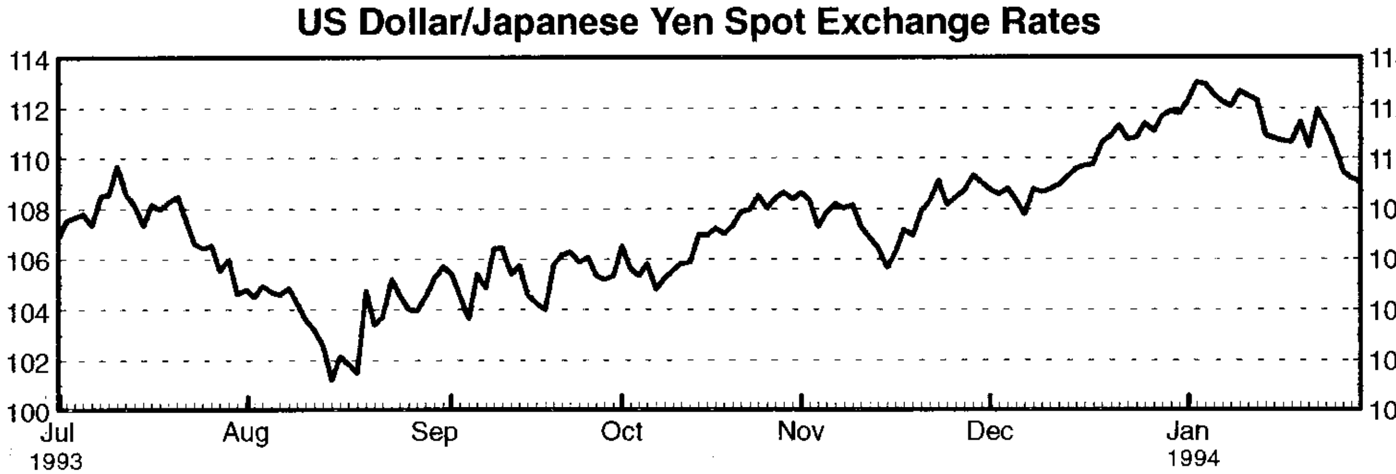
*Foreign exchange market participants express the view that the* market has priced in a 25 basis point increased in the fed funds rate resulting from this meeting. While clearly they expect such an action from this meeting, I think it is extraordinarily difficult to assess what is and what is not priced into the dollar at this point. There has been a pronounced reduction in leverage and in positions over the past month and, at some point, both are likely to increase. But focusing on dollar-mark, my gut tells me that the dollar might rise by a small amount on the fact of a further tightening but could then come off as profits are quickly taken, much as it did in February.

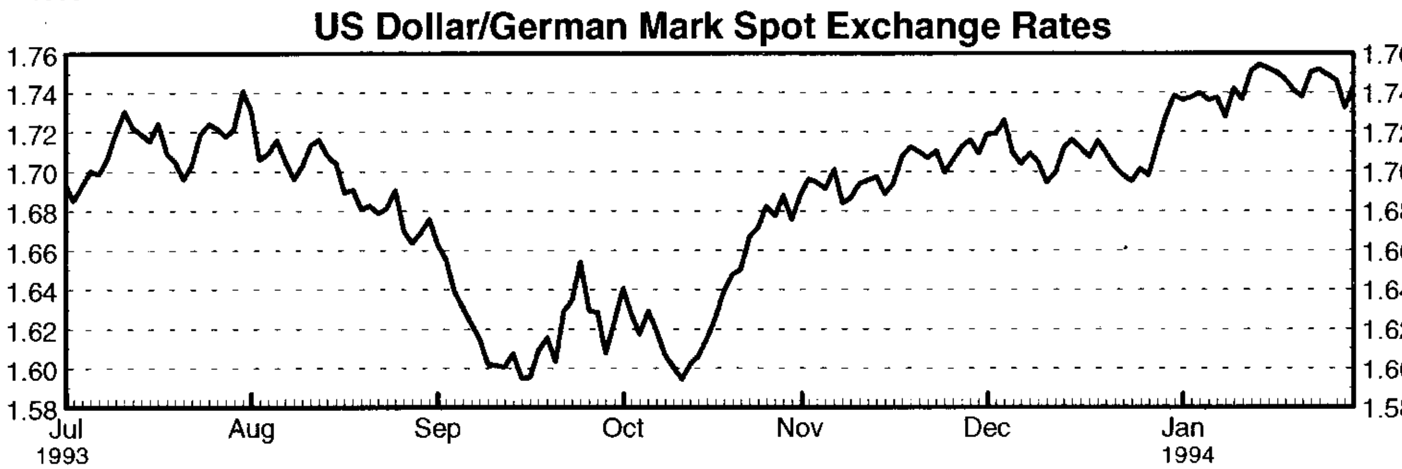
Mr. Chairman, during the period we sold 600 million Swiss francs and 34 million Belgian francs for a total of $417 million. These operations, conducted in furtherance of our objective of eliminating the System's non-mark and non-yen foreign currency balances occurred on 5 different days and--as we intended--had no impact on exchange rates. I note for the Committee that I expect to complete these currency sales by Mid-April.

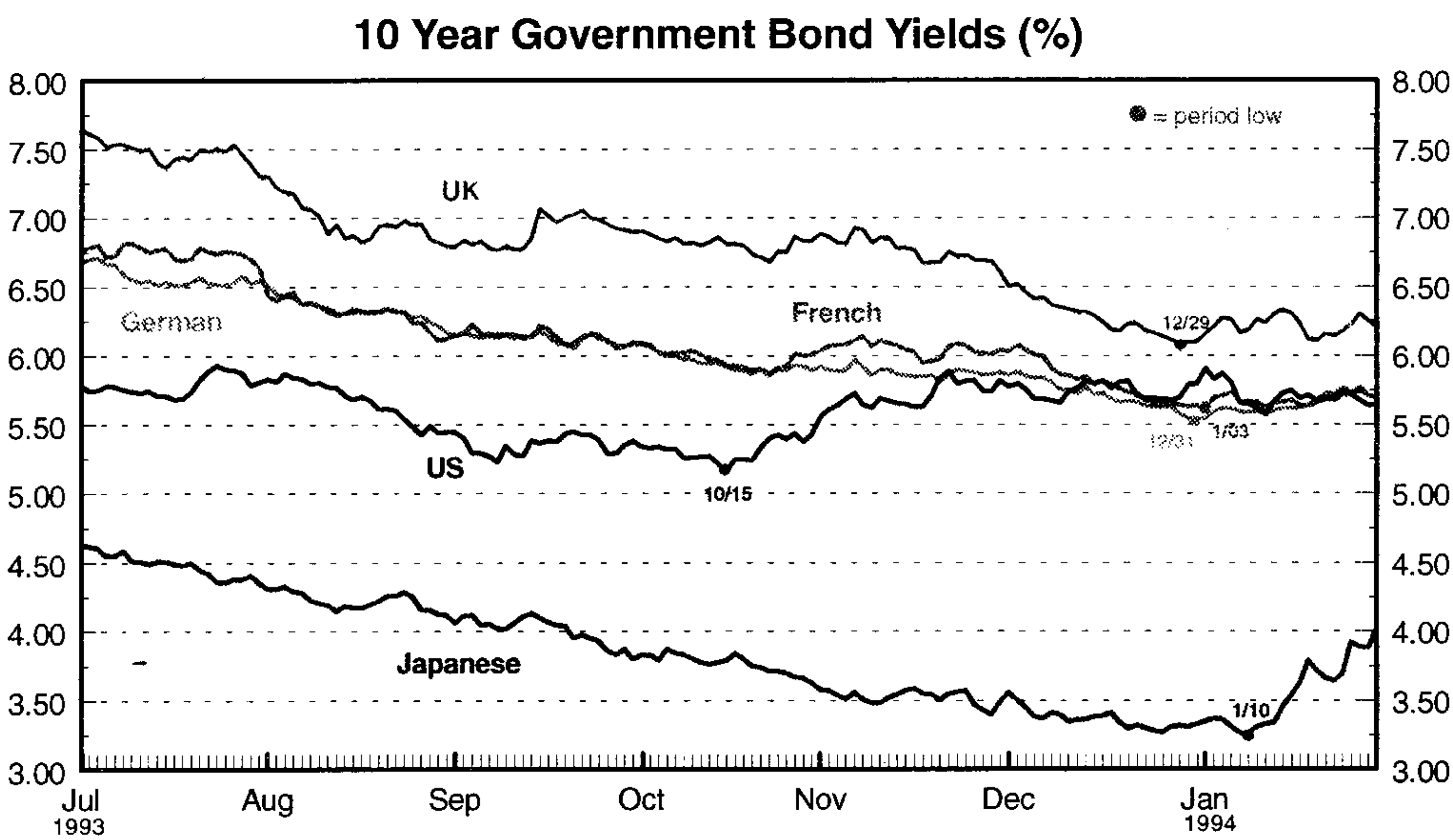
Mr. Chairman, I need the Committee's approval of these operations. I would be happy to answer any questions either on my report or on the currency sales.

# July 1993 through January 1994

A



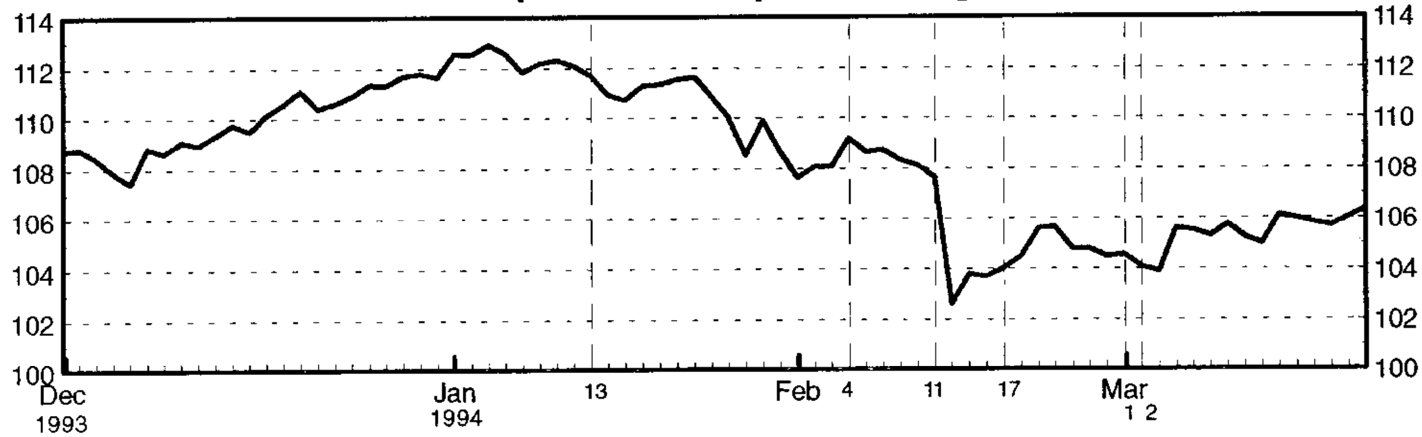

Bryan P. Bradley

Foreign Exchange Function: Federal Reserve Bank of NY
Source: Spot rates, FRBNY; Bond yields, Bloomberg Information Services.

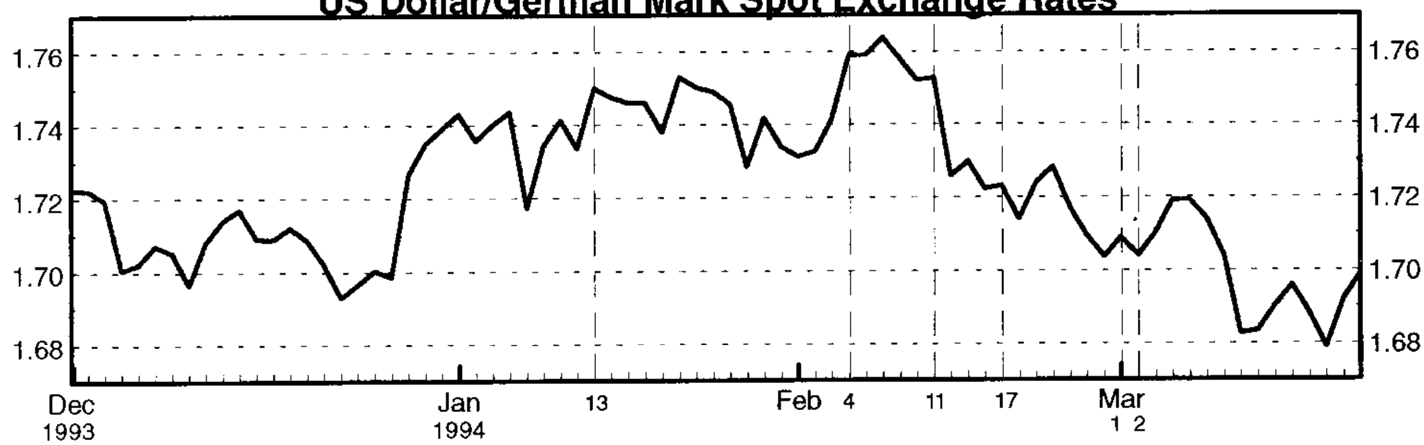
# December 1993 through March 1994

B

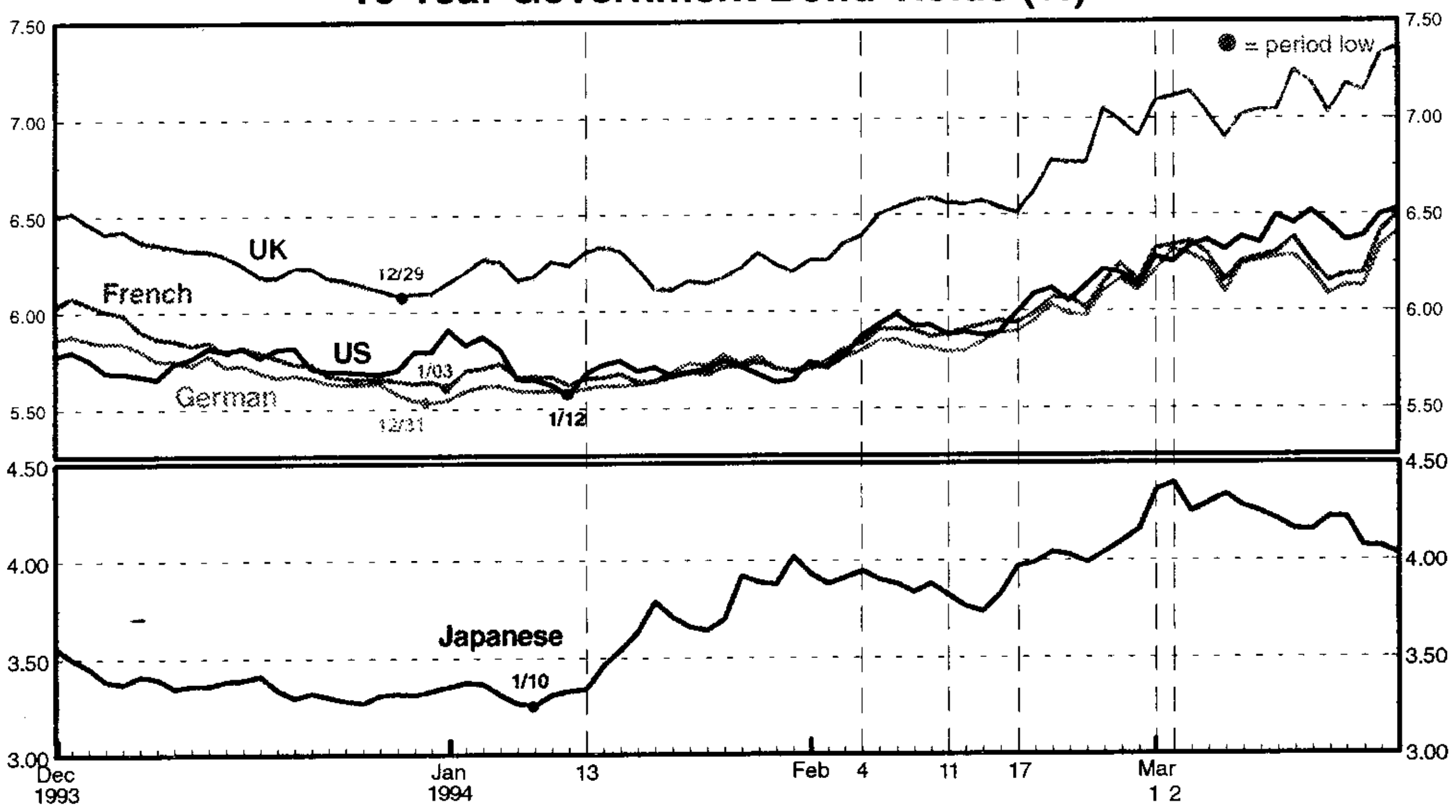
## US Dollar/Japanese Yen Spot Exchange Rates




## US Dollar/German Mark Spot Exchange Rates




## 10 Year Government Bond Yields (%)




Foreign Exchange Function: Federal Reserve Bank of NY

Bryan P. Bradley

Source: Spot rates, FRBNY; Bond yields, Bloomberg Information Services.

NOTES FOR FOMC MEETING
MARCH 22, 1994
JOAN E. LOVETT

Desk operations were aimed at maintaining the slight firming in reserve pressures adopted at your last meeting, associated with federal funds trading around 3-1/4 percent. The borrowing allowance was raised by $25 million to $75 million in conjunction with the altered policy stance, and it was held at that level throughout the interval. Actual borrowing averaged $62 million for the full period. Seasonal borrowing has been steady and quite low. Meanwhile, the funds rate remained near the new intended area for the most part, with the effective rate averaging 3.24 percent for the full period.

At the start of the interval, a small estimated reserve need in the period just underway was expected to grow to moderate dimensions as a result of movements in currency and other operating factors, and in required reserves. Net revisions to factors have tended to enlarge reserve shortages in the past few periods.

We made frequent use of temporary operations to help meet reserve needs. A token round of customer RPs was arranged on February 4th when funds were tending to probe somewhat above the new level in order to clarify the intended degree of firming adopted that day. Since then, a total of 12 multiday System operations and 8 overnight RPs have been arranged.

We also began to acquire securities on a permanent basis, buying $3.3 billion of coupon issues in the market on March 15th, and about $1.6 billion of bill issues intermittently from foreign accounts. These actions have narrowed by a considerable margin the reserve need in the maintenance period currently underway.

Reserve shortages are expected to expand markedly further in upcoming weeks as required reserves and currency grow seasonally, and more outright purchases are contemplated. Some very deep deficiencies could eventually emerge if the Treasury balance bulges following the April tax date, as it frequently does. Given all the modifications to the tax code over the past year and the apparent underlying strength in the economy, this April-May tax season is shaping up to be a very uncertain one.

Pricing of daylight overdrafts is scheduled to commence April 14th, adding another dimension of uncertainty. We have been giving careful consideration to how possible changes in market behavior designed to limit these overdrafts could affect our flexibility in arranging RPs. A recent test-period from daylight overdrafts was inconclusive: collateral available to us was always sufficient for the volume of RPs we planned. But participants may have been too focused on the turmoil in financial markets at the time to pay close attention to daylight overdraft positions. Of course, we will be monitoring this impending development very closely. Before leaving the subject of reserve management, let me note that the reserve estimates suggest that the normal intermeeting leeway may be constraining ahead. Against that background, Mr. Chairman, I would like to request Committee approval of a temporary increase in the leeway of $3 billion, bringing it to $11 billion, for insurance purposes.

In the securities markets, interest rates have moved sharply higher across the yield curve since early February. Short-term rates were already beginning to back up just ahead of and during your last meeting when the slight firming in reserve pressures was announced. Since that time, yields on two- to ten-year Treasury coupon securities have increased a net 80 to 90 basis points, with rates on long-term issues rising about 65 basis points. Treasury bill rates have risen some 45 to 75 basis points.

The intensity of the updraft in intermediate-and long-term yields have surprised most market observers. A variety of factors has been cited, but disagreement about the relative importance of each contributes uncertainty to the interest rate outlook. Thus, the building in of a larger risk premium was certainly a factor. A re-assessment of the strength of the expansion has also played an important role in this jump. After abstracting from the effects of harsh winter weather conditions, most analysts now believe that economic activity has retained more momentum from late last year than anticipated earlier. This gave rise to apprehension that price pressures could be intensifying as continued growth eats into the remaining slack in the economy. And the market is especially sensitive to any hint of incipient inflationary pressures, scouring the behavior of all available indices for use as leading indicators of inflation.

Against this background, the outlook for monetary policy has also undergone a re-evaluation, as the market asked how far and how fast the Fed would have to move. Last month's action was seen as the first installment in a series of gradual policy adjustments away from accommodation. Longer-term yields have moved up as they began to incorporate a higher expected trajectory for shorter-term rates. In explaining some of the market's response to this action, some analysts have even suggested that the firming move itself may have contributed to disquiet on the inflation front by suggesting the Fed knew something the market didn't; and by taking only a limited step, the

Fed may have "fallen behind the curve" in forestalling price pressures.

Several other developments also helped to unsettle markets at various times. Feedback effects from the upswing in interest rates abroad over the past two months were an influence as was the escalating war of words in U.S.-Japanese trade negotiations. Many investment funds hedged their foreign exposures by selling in the more liquid U.S. securities markets. The downward pressure on prices made additional sales necessary amid rumored heavy losses for some large accounts. The backup in rates peaked in mid-March when Whitewater rumors raised new concerns or provided yet another reason for market caution. The long-bond yield rose just shy of 7 percent at that time.

Amid all the volatility in rates, traders lacked confidence about the market's ability to consolidate at any given level. Having been caught off guard by the Fed's move, many participants were also caught with average maturities that were too long on February 4th. They worked aggressively to shorten duration, while the decline in mortgage refinancing exerted the opposite pull. The extensive adjustments to portfolios during the past two months sometimes lifted trading volume to record levels, although involvement by retail accounts was generally limited. Last week's favorable set of PPI and CPI reports provided some support to the market and helped yields pull back a little from their highest levels. Our recent coupon purchase also may have been of minor technical benefit to the market. But the underlying tone in the market remains very nervous indeed.

At this point, most participants see further policy adjustments as a near-certainty, with the next move seen likely to come as soon as today. There is, however, some diversity of opinions about the appropriate pace of further policy actions. Another modest firming at this time would probably be greeted with greater equanimity than the initial move and, in fact, another 25 basis points is already priced into the existing rate structure. Some participants say the Fed will take a measured approach to its firming in light of the market's adjustment to date and because only modest steps are warranted by the economy in any case. Some feel the Fed should move 50 basis points in case it has fallen behind and to get ahead of the "other shoe" syndrome with the market's jitters; judging its reaction to such a move is difficult, and those suggesting the move are unable to say whether this would stabilize the market or create additional volatility.

E.M.Truman
March 22, 1994

FOMC Presentation -- January Data on Trade in Goods and Services

We had planned that I would say a few words about the January data on U.S. trade in goods and services that were released this morning as an hors d'oeuvre before Mike provides the main meal. As it happens, I can be very brief because the data are very close to what we projected for the Greenbook, and the revisions to the data for December are also minor.

January was the first month for which the Commerce Department released data on a new comprehensive basis covering estimates of trade on both goods and services and on a balance of payments basis. The nominal goods and services deficit was $6.3 billion for the month slightly smaller[1] than the average monthly deficit in the fourth quarter, but about $2 billion larger than the deficit in December. The merchandise trade deficit was $11 billion on the balance of payments basis (about $9.8 billion on the more familiar Census basis). Again, this figure was slightly larger than the average for the fourth quarter but substantially larger than the deficit in December.

Compared with December, both imports and exports in January were lower, but the reduction in exports was larger. Most of the decline in imports was in oil, due to lower quantities and lower prices, but automotive imports also declined. Imports of capital goods increased. The decline in

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1. In the original oral presentation, the January deficit was reported to be slightly larger; this was corrected later in the meeting.

exports was more broadly based, including gold, agricultural goods, and aircraft.

On balance, based on our quick look at the data, the January data are remarkably close to what we had been anticipating, implying at this stage no need to adjust our outlook that net exports of goods and services resumed their trend deterioration this quarter.

I turn now to Mike for the main event.

Michael J. Prell
March 22, 1994

FOMC Briefing

Examining the Greenbook economic forecast, one is reminded of the warning that, if something looks too good to be true, it probably is. Basically, we are projecting that, with an increase in the federal funds rate of roughly a percentage point over the next year or so--a rather mild rise by past cyclical standards, and perhaps less than the markets are currently discounting--you can look forward to achieving something akin to the mythic soft landing. Real GDP growth, which was almost 4 percent in 1992 and 3-1/4 percent in 1993, would slow to 2-2/3 percent this year and to 2-1/3 percent in 1995. Unemployment would level out just above 6-1/2 percent, close to what we think constitutes the "natural rate" in today's economy. And core inflation would be a smidge below 3 percent. What, you might ask, is wrong with this picture?

Clearly, if one's objective is solely the achievement of further disinflation over the next couple of years, this scenario leaves something to be desired. But, within the logic of our projection, there's an obvious solution to that problem: Apply greater monetary restraint than assumed in the baseline path we've presented. From this perspective, the bigger issues regarding the forecast may be said to relate to the positive aspects of our analysis rather than the normative. That is, do we have the relationships right? Would you get the combination of growth, resource utilization, and inflation that we've projected <u>if</u>, in fact, you followed the funds rate path we've assumed?

So, let me address those features of our forecast in sequence. First, we think that real GDP this quarter probably will post another substantial gain, our point estimate being 3-1/4 percent, at an annual rate. The confidence interval around this estimate is wider than it might normally be at this stage, because the signals from the January and February labor market surveys were distorted by storms and methodological changes. Still, a variety of indicators suggest that employment has been growing and that industrial production has increased appreciably--with a substantial boost from motor vehicle assemblies.

On the expenditure side of the ledger, the step-up in vehicle production should show through partly in greater inventory accumulation. Meanwhile, final sales appear likely to register only a moderate increase--around 2-1/2 percent. Consumer spending seems to be growing at about that pace, judging from recent retail sales data and the evident heavy outlays for heating and brokerage services. In other sectors, the early indications for business fixed investment and residential construction are that gains in expenditure will be sizable this quarter, but far less so than in the latter half of 1993. And, as Ted noted, this morning's trade data point in the direction of some softening of net exports. All this said, though, I would reiterate my earlier comment that we're still on very shaky ground in estimating even where we've been in the current quarter.

Which brings me to the uncertain prospects for the future. As you know, we are projecting a further deceleration in output during the second quarter, to about 2-1/2 percent for GDP. One might argue that the second quarter should be boosted by earthquake recovery and a catch-up in some types of activity for the weather-related losses in the winter. Indeed, we have factored such effects into our forecast. But they are more than offset by the scheduled drop-off in seasonally adjusted motor vehicle production this spring--which will be deducting about 1-1/2 percentage points, at an annual rate, from GDP, after adding a similar amount in the current quarter. In addition, we think that forces tending to moderate the underlying trends in demand growth will be increasingly felt in coming months.

In the consumer sector, spending will no longer be receiving the boost it has been from extra cash flow freed up by new mortgage refinancings; recent securities market developments have curbed the growth of household net worth and alerted naive investors to the risk that today's asset values may not be sustained tomorrow; consumer credit undoubtedly will become more expensive as increases in market rates feed through to loan rates; tax payments are rising; and purchases of consumer durables already have reached rates sufficient to accommodate the gradual replacement of old vehicles and household furnishings as well as some expansion of stocks. In the residential construction sector, while we still think affordability is favorable enough to warrant a projection of starts well above what might be dictated by longer-range demographic trends, the backup in mortgage rates will take some toll on demand. We've trimmed our projection of starts significantly, and see them dropping off somewhat after a spring resurgence. And, in the business sector, with accelerator effects waning, internal funds growing less rapidly, and external financing costs higher, capital spending is likely to be less robust than it has been in recent quarters.

Obviously, this analysis involves a lot of difficult judgments, one of them relating to the interpretation of the recent rise in interest rates and, thus, where rates can be expected to go from here. It is our view that the run-up in bond yields likely has been exaggerated by transitory trading dynamics, as well as by some excessive fears of inflation stirred up by the year-end surge in activity and rising materials prices. Therefore, we are expecting bond yields to come back down somewhat, that retracing being limited, though, by the assumed increase in the funds rate. When things settle out, we expect that nominal long rates will run about a half percentage point above the path in our last forecast, the increment being mainly attributable to higher real rates that will tend to damp aggregate demand.

I must say that I'd feel more comfortable about our rate projection if there had been at least some hint of a rally in the past week. It certainly would be folly at this point to rule out the possibility that bond yields will reach even higher levels if and as the funds rate rises further. But, given the steepness of the yield curve and our assessment of the other forces shaping demands in the economy and financial markets, I still wouldn't want to rule out, either, a bigger drop in bond rates than we've projected. The uncertainties with which one must contend here involve not simply the anticipations and risk tolerance of securities market investors but also the difficult assessment of what level of real rates is sustainable in light of expected returns on physical capital here and, to at least an extent, abroad.

On that confident note, let me turn to the other two issues I noted earlier--the current and prospective degree of slack in the economy and the outlook for inflation. For a variety of technical reasons, we believe that the published statistics have overstated the decline in the unemployment rate in the past couple of months. But the higher level of output growth now indicated for late 1993 helps explain the decline in joblessness registered through December, and some further decline seems likely to have occurred this quarter. We would think of unemployment as having been around 6-3/4 percent in February--perhaps a quarter point below the fourth-quarter average. Meanwhile, industrial capacity utilization has risen a percentage point further.

The question is how much farther this can go without pressures on resources becoming so great that wages and prices accelerate. One might argue that some warning signs have already emerged: many materials prices have risen, and--putting together the indications from the Employment Cost Indexes and the monthly average hourly earnings--the pace of increase in wages seems at least to have flattened out in the past year. We don't think that these are compelling signals of an imminent pickup in the prices of finished goods and services, but we do think that the economy may not have much room to run at this point before pressing hard against its potential.

A range of representative econometric point estimates of the NAIRU probably would extend from about 6 percent to 6-3/4 percent, making a half-point adjustment to the old numbers for the change to new household survey. Our point estimate is 6-1/2 percent or a shade less. If one allows for a reasonable confidence interval around these estimates, it is clear that we may already be at the NAIRU or at least close to it. Even if one adopts a more optimistic view (say, the 6 percent NAIRU), continuation of GDP growth at the pace of the past couple of years probably would mean that we would run out of slack in 1995--a time span that is relevant, given normal lags, to monetary policy decisions today.

One might well wish to take a broader approach to assessing the prospects for inflation. We can summon up without difficulty reasonable stories supporting slower or faster growth of aggregate demand. Favorable supply shocks are certainly possible--for example, productivity improvements could prove stronger--but then, too, the sideways trend of recent years in the labor force participation rate might persist and speed the decline in unemployment. Inflation expectations could drop more into line with recent experience, but, if anything, recent developments might be viewed as highlighting the possible upside risks in this regard. In the end, we think our characterization of the inflation outlook reasonably balances the forecast risks in a probabilistic sense. We respectfully leave to you, of course, the task of applying policy weights to those and other risks in the economy.

March 22, 1994

FOMC Briefing
Donald L. Kohn

The question that would seem to be facing the Committee at this meeting is should reserve conditions be tightened further at this time, and if so by how much. Recent developments in financial markets undoubtedly complicate judgment on this issue. Interest rates are substantially higher and money growth weaker than anticipated at the last meeting of the Committee, even after allowing for the firming of reserve conditions on February 4. Moreover, markets are quite skittish, reacting strongly and somewhat unpredictably to new information. The implications of these developments, along with an assessment of the response of markets to further Federal Reserve action or inaction, may have a bearing on your evaluation of the economic outlook going forward and policy options.

The reasons for the extent of the rise in rates are not entirely clear, especially in the bond market. Obviously, the FOMC's action of February 4 played a major role. It came sooner than many had expected, and markets now see the Federal Reserve as tightening much more rapidly than they had previously built into the yield curve. This revision of expectations has had its largest effects on short- and intermediate-term rates, but the arithmetic of the yield curve indicates that some has fed through to the long end as well. An evaluation that the Fed was more willing to raise rates would increase real rates, if anything damping inflation expectations. The resulting rise in rates would restrain aggregate demand relative to previous forecasts--presumably the reason for undertaking the action.

However, expectations of faster tightening seemed to reflect reassessment not only of the Fed's willingness to act but also of the need for action. In part, markets are said to have taken their cue from the Fed--if we're worried they should be too. More fundamentally, incoming data on the economy indicated greater strength in aggregate demand and lower unemployment than many had anticipated. With less slack and greater demands, higher real rates would be needed to keep the economy from overshooting. In retrospect, interest rates may have been below sustainable levels last fall, especially in light of the increasingly accommodative lending posture of banks and other intermediaries. It would not be surprising if unanticipated strength in aggregate demand led also to some upward adjustment in inflation expectations as the economy was seen to approach potential output sooner. Higher inflation expectations may be evident in the continued rise in commodity prices and the relatively small size of the stock market decline; both suggest that real rates probably did not rise by the full extent of the increase in nominal rates.

Finally, increased uncertainty--about Federal Reserve intentions and about a wide range of developments in foreign economies and our relations with them--may have contributed to the upward movement in rates. And some may have resulted from attempts by major players to head for the door simultaneously, with selling motivated less by a sense of changing fundamentals than a need or strong desire to trim long bond positions at whatever price. Included in this last category might be those new mutual fund owners awakening to the risk of their investment. These types of factors would increase liquidity premiums, raising longer-term real rates.

Some of these influences may moderate over coming weeks, as portfolios are better adjusted, as the Committee's intentions become clearer, and as information on the economy confirms a moderate growth path and continuing low inflation. As a consequence, in the staff forecast a portion of the recent runup in long rates is reversed, even with rising short-term rates. But not all of it. Higher long-term rates than in the last Greenbook are associated with about the same outlook for inflation and the GDP gap. In effect, information on the performance of the economy has led the staff to see a slightly higher natural long-run interest rate, at least for a time. Short-term rates need to rise further, validating to some extent expectations embedded in the yield curve, to keep long-term rates from slipping significantly below the natural rate again, which, given the small amount of slack, would allow inflation pressures to strengthen.

With regard to how fast short-term rates should rise, the recent behavior of money and credit provides limited information. The growth of credit to nonfederal sectors did pick up over the second half of last year and appears to be growing at its more advanced pace in the first quarter. At 5 percent or so, expansion of private credit remains in a moderate range, but its acceleration seems indicative of lessened restraints on the supply of credit and greater demand to use it. The more aggressive attitude of intermediaries is underlined by our latest survey of interest rates charged by banks on business loans, which was taken after the February tightening. Not only, as we know, was the prime unchanged, but the survey suggested that little of the increase in rates was passed through to business borrowers whose loans were not tied to prime. In capital markets, quality spreads remain low, P/Es high, and credit readily available. As a consequence, as federal borrowing has slowed, private borrowing has filled the gap, keeping total debt growth mostly in the 5 to 6 percent area. We see the rise in rates as having very modest effects on credit demands, damping growth in private and total debt slowly over the year.

All of the monetary aggregates--narrow and broad--were weaker than expected in February, with M2 and M3 actually declining. Our assessment, however, is that this behavior arose primarily from particular short-run influences, rather than from an underlying constriction of financial flows or as a precursor of lagging income growth. Some of the shortfall in money may have reflected an outsized reaction to higher short-term interest rates--especially in the behavior of the institution-only money funds in M3. And a portion owes to large, but temporary, effects of the back-up in long-term rates in depressing mortgage prepayments and associated demand deposits. M2 and, to a lesser extent, M3 seem to be rebounding in March, partly as savers reassess the risks of owning bond and stock mutual funds, and we are projecting modest growth on the order of 2 percent plus for M2 and 1 percent plus for M3 through June. Data available this morning indicate an even stronger rebound in March than in the bluebook. Measures of money that include mutual funds have slowed substantially, partly reflecting the effects of capital losses.

If weak money, or the mixed economic data in recent weeks, were seen by the Committee as suggesting the possibility of a significant slackening in the trend of aggregate demand growth, there would be a case for waiting to take any further action, as in alternative B. If the economy were already slowing substantially, the recent rise in long-term rates, which would damp aggregate demand further over coming quarters, would only bolster that case. Choice of this alternative might embody a judgement that much of the rise in rates was in liquidity premiums or resulted from perceptions of a more aggressive Fed rather than a persisting shift in aggregate demand. In addition, the continued downtrend in consumer prices and in labor costs may suggest the possibility of greater slack than in the staff forecast and little risk in delaying action. In effect, as has happened repeatedly in recent years, markets may have built in a steeper trajectory for policy action than is actually needed to foster the Committee's objectives. Holding federal funds at 3-1/4 percent for a time would send a signal that the Committee was on a more measured firming path than the market had assumed and real interest rates should decrease. While questions might be raised about the intentions of the Committee and its commitment to containing inflation, if the economy were in fact on the more moderate path thought consistent with the choice of alternative B, data emerging over time would quiet inflation expectations and allow nominal as well as real yields to decline.

If, on the other hand, the Committee saw the risks as skewed toward greater inflation, additional tightening would be called for. Judgment that the remaining slack was quite limited, as in the staff forecast, might suggest that the costs, in terms of building inflation pressures and inflation expectations, of an unexpected surge in demand were greater than the penalty for a shortfall. In the context of generous credit availability, strong aggregate demand might be a distinct possibility so long as real short-term rates were still quite low, especially if the failure to raise those rates pulled down real long-term rates as well.

In this case, the question would remain as to how much to firm--whether to raise the federal funds rate 25 or 50 basis points. An immediate 25 basis point increase is about what is built into markets at this time. Other interest rates probably would not move much, at least initially, if this more limited action were taken, though decreases in long-term rates would still be quite likely over time. The risk of an outsized reaction in markets is small, and, in fact, behaving in a steady, predictable fashion may erode some of the expectations of a steep trajectory of Federal Reserve firming over coming months. This option might be especially favored if there were significant uncertainty about the strength of demand going forward, the level of long-term rates consistent with containing inflation, and hence about the need for more decisive action in reserve markets. However, a 25 basis point move would leave in place expectations of another action in the near term and the uncertainty about its timing.

A full 50 basis point firming, as under alternative C, is a higher-risk option, with the potential for greater rewards. If the Committee were convinced that a 50 basis point increase were needed, and fairly soon, to contain inflation pressures or to reduce them further if that were your objective, there might be little advantage to doing it in two steps. Because it would surprise markets, their reaction is difficult to predict. Bond rates are more likely to go up than down, at least initially. However, if it were perceived as the last move for a while, simply bringing forward in time actions expected fairly soon in any case, the more decisive action of this option might have a calming influence, and it should damp any emerging inflationary expectations. Accompanying the action with words that suggested the Federal Reserve had returned to a posture of "watchful waiting" for a time might help to temper market reaction. In that regard, if the Committee favored something like alternative C, consideration might be given as to whether a 50 basis point increase ought to be accomplished through Board approval of a discount rate hike. That would give a natural forum for explaining the Federal Reserve's intentions and expectations, if the Committee wished to avoid reinforcing the precedent of explaining changes in policy brought about through open market operations. There is some risk of a further sharp market response to alternative C if unanticipated action were read as indicating that the Federal Reserve was even more concerned about inflation and prepared to continue tightening faster than previously expected.

Suggesting that short-term rates might not need to change for a while after implementing alternative C would be easier if you could have some confidence that they were then close to their "neutral" or natural level--consistent with the economy growing at its potential. Surely they are below that level now, but how close another 25 or 50 basis points would bring them is hard to say. The neutral level of short-term rates is very much a moving target, depending on the other forces acting on the economy, including the level of intermediate- and long-term rates. Moreover, absent a good indication of inflation expectations,it may be difficult to determine the level of real rates. By almost any measure, inflation and inflation expectations have come down over the last year, so that even before the February 4 action real short-term rates probably were rising. If I use as a first approximation the lagging 12-month CPI, the real funds rate is around 3/4 percent right now, though under the staff forecast it would fall as increasing energy prices pushed up overall inflation. From 1954 (when the fed funds series begins) through 1993, the average was 1-3/4 percent, suggesting a neutral funds rate of 4-1/2 percent plus if inflation and inflation expectations level out near 3 percent. An interesting subperiod is 1954 to 1965, which excludes the inflation of the 1970s and fiscal expansion of the 1980s. For this period, the average real funds rate is a little over 1-1/4 percent. A 50 basis point increase in the federal funds rate would bring real short-term rates close to their 1954 to 1965 average. Of course, market structures and relationships have changed considerably since then, and inflation expectations are probably in excess of the measured CPI rate of the last 12 months. But such measures suggest you may not have that far to go beyond the next few tightenings, especially if inflation remains subdued.